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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/532,398	03/22/2000	Paul A. Boerger	10991888-1	8092

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EXAMINER

FERRIS III, FRED O

ART UNIT PAPER NUMBER

2128

8

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/532,398

Applicant(s)

BOERGER ET AL.

Examiner

Fred Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-29 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. *Claims 1-29 have been presented for examination based on applicant's amendment filed 2 December 2003 (paper #5). Claims 1-15 remain rejected. Claims 16-29 have been allowed over the prior art of record.*

Response to Arguments

2. *Applicant's arguments filed 2 December 2003 (paper #5) have been fully considered.*

Regarding applicant's response the Double Patenting rejection: The examiner withdraws the Double Patenting rejection of claims 1-29 in view of applicant's terminal disclaimer (paper # 6) filed 2 December 2003.

Regarding applicant's response to 102(a) and 103(a) rejections: Since applicants have argued 102 and 103 rejections as a group, the examiners response will coincide.

*Per applicant's response to claims 1-15: Applicants argue that the prior art (Haerle, Ryczek) does not teach the claimed inventions "model" of an illumination source and have referenced the "exemplary embodiments of the model described in the specification" in arguing the distinction of the claimed invention model over the prior art of record. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., representing the illumination of the source without measuring, etc.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988*

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicants have not claimed any limitations specific to the illumination model that would distinguish it over the prior art.

The examiner asserts that applicants have merely broadly claimed the following:

- An illumination source*
- A model of the illumination source with an output*
- An exposure adjustment compensating for changes in the illumination source*

The examiner further asserts that figures 1-5 of Haerle, and 1-2 of Ryczek, in fact depict a physical model of an illumination source. These physical systems clearly meet the definition of a model as recited in applicant's own arguments (page 8, line 14). Further, the term exposure is not defined by the claims and has numerous meaning in the technical arts including exposure time, i.e. on time of the LED, which is clearly disclosed by Haerle, and Ryczek as cited below.

In an LED light output is a function of forward current. Luminous intensity (brightness), wavelength (hue or color), and forward voltage are the three main parameters of an LED that are affected by temperature. When compared to room (ambient) temperature, higher temperatures cause the luminous intensity to slightly decrease (dimmer), the wavelength slightly lengthens (shifts towards red spectrum), and the forward voltage slightly decreases. Colder temperatures cause the luminous intensity to increase (brighter), the wavelength slightly shortens (shifts towards blue spectrum), and the forward voltage slightly increases. Accordingly, it would have been obvious to a skilled artisan (and necessary for the circuit to operate properly), to adjust the exposure based on the sensed ambient temperature, and hence, would have been incorporated as an inherent part of the cited prior art, and the claimed invention's

illumination model. Further, because LED's are current devices they behave unpredictably when the applied voltage is varied, therefore the technique of pulse width modulation (i.e. switching on and off) is generally used to maintain a constant current and light output. Accordingly, a skilled artisan would have known to incorporate features relating to on times and off times into the model of the illumination source.

The examiner therefore maintains the 102(a) and 103(a) rejections of claims 1-16.

Regarding claims 16-29: The examiner withdraws the 102(a) and 103(a) rejection of claims in view of applicant's arguments and the "mean for" language of independent claims 15 and 23. (See allowable subject matter below)

Claim Interpretation

3. *The examiner accepts that techniques relating to image capture systems are well known in the art and have not been specifically disclosed in applicant's specification. Accordingly, the recitations contained in the preamble of independent claims 1 and 23, and in dependent claims 2-7, and 24-29 relating to "an image capture device" are interpreted by the examiner as intended use of the claimed invention.*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-2, 7-11, and 13 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by U.S. Patent 6,486,945 issued to Haerle et al.

Haerle discloses an optical monitoring device that includes light emitting diodes (illumination source) controlled by a circuit (central unit) that models the operation and provides a changing adjustment to the light source in response to the modeling circuit.

For example, at column 3, line 53 Haerle recites:

"The control of the circuit devices S1 and S2 as well as SP1 to SP(n) is effected here from the central unit 10 which includes a current source 10' which also measures the voltages U1, U2 and U3. As a particularly preferred further development, the exists of controllably driving the current source 10' so that the current flowing through the active transmitting diode D(n)2 is adjusted. In this process, however, not only is the current automatically controlled to a constant value but also adjusted according to the measured light output."

Haerle further discloses a controlling the on – off times and current flow to the illumination source. (See Fig. 1) At column 3, line 25 Haerle recites:

"Thus, circuit device S2 is closed and therefore current can flow from the current source 10' of the central unit 10 via S2 to the diode D(n)2 and via this to and through the closed circuit device SP(n) and the resistor R3 to ground."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,065,007 issued to Tanaka in view of U.S. Patent 5,471,052 issued to Ryczek.

Regarding independent claims 1, and 8: Tanaka discloses an apparatus for measuring the amount of light output from a light emitting diode (LED) that incorporates a light receiving device and a light measuring circuit. (Abstract, Summary of Invention, CL3-L7-65, CL4-L5-26, Figs. 1-3)

Tanaka does not explicitly disclose a light output measuring model that adjusts the light based on changes at the illumination source.

Ryczek discloses a microprocessor controlled light output measuring apparatus (and model) that makes corrections (adjustments) to the LED current based on measured light output. Ryczek also discloses an ambient temperature sensor as an input to the model and applying adjustments (compensation) to the illumination device based on temperature. (Abstract, Summary of Invention, CL2-L4-40, CL4-L1-30, CL5-L12-65, CL6-L1-20, 50-61, CL8-L43-65, Figs. 1, 2, 5-7)

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Tanaka relating to an apparatus for measuring the amount of light output from a light emitting diode (LED) that incorporates a light receiving device and a light measuring circuit, with the teachings of Ryczech relating to a model that makes corrections (adjustments) based on both measured light output and measured temperature. An obvious motivation exists since, as referenced in the prior art, the limitations in light measurement output accuracy is relative to the models ability to compensate for ambient temperature. (see Ryczech CL1-L55) Accordingly, a skilled artisan would have been motivated to include compensation (adjustments) for ambient temperature in the measured light output model in order to improve the accuracy of the light output measurement.

Regarding dependent claims 2-7, and 9-15: As cited above, Ryczech discloses microprocessor controlled light output measuring model that incorporates an ambient temperature sensor. In addition, the Ryczech reference discloses pulse width modulation (controlling on-off times) of illumination sources (LED's), a hardware model (circuit) incorporating resistor/capacitor/inductors, and computer program code (inherent in microprocessor). (Abstract, Summary of Invention, CL2-L4-40, CL4-L1-30, CL5-L12-65, CL6-L1-20, 50-61, CL8-L43-65, Figs. 1, 2, 5-7)

Allowable Subject Matter

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 16 and 23 use “mean for” language and are given deference in view of In re Donaldson and interpreted in view of 35 U.S.C. § 112 paragraph 6. The “means for” language and the limitations related thereto of claims 16 and 23 are interpreted within the scope of enablement as provided within the relative embodiment provided within applicant’s specification (see pages 5-9, for example). Claims 17-22 and 24-29 are allowable as depending from claims 16 and 23 respectively.

Conclusion

7. THIS ACTION IS MADE FINAL. *Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).*

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.

U.S. Patent 6,087,846 issued to Alvord et al teaches LED light output testing and measuring.

PCT WO 01/27910 A1 issued to Silvestre teaches illumination measuring.

U.S. Patent 6,127,783 issued to Pashley et al teaches LED illumination detection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

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